

SEQUENCE LISTING

<110> Takeuchi, Masahiro
Yamaji, Noboru
Takasaki, Jun
Akamatsu, Masahiko
Tsunoyama, Kazuhisa
Harigai, Masayoshi

<120> NOVEL GENES RELATING TO CHRONIC RHEUMATOID ARTHRITIS

<130> Q85885

<140> 10/521,940

<141> 2005-01-21

<150> PCT/JP03/09180

<151> 2003-07-18

<150> JP 2002-211951

<151> 2002-07-22

<160> 34

<170> PatentIn version 3.3

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Lys	Leu	Leu	His	Gln	Val	Ser	Lys	Leu	Cys	Gly	Lys	Cys	Ser	Pro	Thr	
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gac	gtg	gac	atc	ctg	cag	ccc	tcc	ttc	aac	ttc	ctg	tat	tgg	agc	ctt	144
Asp	Val	Asp	Ile	Leu	Gln	Pro	Ser	Phe	Asn	Phe	Leu	Tyr	Trp	Ser	Leu	
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Ser	Ser	Thr	Gly	Leu	Met	Glu	Leu	Leu	Glu	Lys	Met	Leu	Ala	Leu	Thr	
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Leu Leu Thr Ala Ser Phe Ser Ala Gln Gln His Lys Gly Ser Leu Gln	
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Val His Gln Thr Leu Ser Val Glu Met Asp Gln Val Leu Lys Ala Leu	
115 120 125	
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Ser Phe Pro Lys Lys Lys Ala Ala Leu Leu Ser Ala Ala Ile Leu Cys	
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145 150 155 160	
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Leu Val Pro Ser Gly Ala Gln Pro Leu Pro Ala Thr Lys Asp Thr Val	
165 170 175	
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Leu Ala Pro Leu Arg Met Ser Gln Val Arg Ser Leu Val Ile Gly Leu	
180 185 190	
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Gln Asn Leu Leu Val Gln Lys Asp Pro Leu Leu Ser Gln Ala Cys Val	
195 200 205	
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Gly Cys Leu Glu Ala Leu Leu Asp Tyr Leu Asp Ala Arg Ser Pro Asp	
210 215 220	
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Ile Ala Leu His Val Ala Ser Gln Pro Trp Asn Arg Phe Leu Leu Phe	
225 230 235 240	
acc ctc ttg gat gct gga gag aat tcc ttc ctc aga cct gag att ttg	768
Thr Leu Leu Asp Ala Gly Glu Asn Ser Phe Leu Arg Pro Glu Ile Leu	
245 250 255	
agg ctc atg acc ctg ttt atg cgg tac cgg agt agc agt gtc ctc tct	816
Arg Leu Met Thr Leu Phe Met Arg Tyr Arg Ser Ser Ser Val Leu Ser	
260 265 270	
cat gaa gag gtg ggt gat gtt ctg caa ggt gtg gct ttg gct gac ctg	864
His Glu Glu Val Gly Asp Val Leu Gln Gly Val Ala Leu Ala Asp Leu	
275 280 285	
tct acc ctc tcg aac acc aca ctc cag gcc ctg cat ggc ttc ttc cag	912
Ser Thr Leu Ser Asn Thr Thr Leu Gln Ala Leu His Gly Phe Phe Gln	
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ctg cag gcc tcc ttg gag ggc ctt ccc cct agc acc tcc tca ggc cag 1008
 Leu Gln Ala Ser Leu Glu Gly Leu Pro Pro Ser Thr Ser Ser Gly Gln
 325 330 335

cca ccc ctg cag gac atg ctc tgc ctg gga ggg gtg gct gta tcc ctg 1056
 Pro Pro Leu Gln Asp Met Leu Cys Leu Gly Gly Val Ala Val Ser Leu
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 20 25 30

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 35 40 45

His Gln Thr Thr Pro Ser Ser Gln Lys Arg Ala Ala Ala Val Leu Leu
 50 55 60

Ser Ser Thr Gly Leu Met Glu Leu Leu Glu Lys Met Leu Ala Leu Thr
 65 70 75 80

Leu Ala Lys Ala Asp Ser Pro Arg Thr Ala Leu Leu Cys Ser Ala Trp
 85 90 95

Leu Leu Thr Ala Ser Phe Ser Ala Gln Gln His Lys Gly Ser Leu Gln
 100 105 110

Val His Gln Thr Leu Ser Val Glu Met Asp Gln Val Leu Lys Ala Leu
 115 120 125

Ser Phe Pro Lys Lys Lys Ala Ala Leu Leu Ser Ala Ala Ile Leu Cys
130 135 140

Phe Leu Arg Thr Ala Leu Arg Gln Ser Phe Ser Ser Ala Leu Val Ala
145 150 155 160

Leu Val Pro Ser Gly Ala Gln Pro Leu Pro Ala Thr Lys Asp Thr Val
165 170 175

Leu Ala Pro Leu Arg Met Ser Gln Val Arg Ser Leu Val Ile Gly Leu
180 185 190

Gln Asn Leu Leu Val Gln Lys Asp Pro Leu Leu Ser Gln Ala Cys Val
195 200 205

Gly Cys Leu Glu Ala Leu Leu Asp Tyr Leu Asp Ala Arg Ser Pro Asp
210 215 220

Ile Ala Leu His Val Ala Ser Gln Pro Trp Asn Arg Phe Leu Leu Phe
225 230 235 240

Thr Leu Leu Asp Ala Gly Glu Asn Ser Phe Leu Arg Pro Glu Ile Leu
245 250 255

Arg Leu Met Thr Leu Phe Met Arg Tyr Arg Ser Ser Ser Val Leu Ser
260 265 270

His Glu Glu Val Gly Asp Val Leu Gln Gly Val Ala Leu Ala Asp Leu
275 280 285

Ser Thr Leu Ser Asn Thr Thr Leu Gln Ala Leu His Gly Phe Phe Gln
290 295 300

Gln Leu Gln Ser Met Gly His Leu Ala Asp His Ser Met Ala Gln Thr
305 310 315 320

Leu Gln Ala Ser Leu Glu Gly Leu Pro Pro Ser Thr Ser Ser Gly Gln
325 330 335

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340 345 350

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Pro Lys Ala Gly Gly Arg Ala Ala Pro Pro Asn Ser Gln Asp Ala Cys
20 25 30

agc acc ccc cac gcg ccg ctc tcc gcc tct ggg gag cat cct gcc acc 144
Ser Thr Pro His Ala Pro Leu Ser Ala Ser Gly Glu His Pro Ala Thr
35 40 45

ccc cga cac aca cac ccc ggc tac atc ccg cct tct cac gct tgg tca 192
Pro Arg His Thr His Pro Gly Tyr Ile Pro Pro Ser His Ala Trp Ser
50 55 60

ggc gct ctg gag atg tcg gag atc cag gct ttt cct aaa gag tca gga 240
Gly Ala Leu Glu Met Ser Glu Ile Gln Ala Phe Pro Lys Glu Ser Gly
65 70 75 80

ttg gaa ggc gga ctc cca ccg ttt gct gag ctc cac atg aca aca gca 288
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85 90 95

gac gac agg ccg cac tga 306
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Ser Thr Pro His Ala Pro Leu Ser Ala Ser Gly Glu His Pro Ala Thr
 35 40 45

Pro Arg His Thr His Pro Gly Tyr Ile Pro Pro Ser His Ala Trp Ser
 50 55 60

Gly Ala Leu Glu Met Ser Glu Ile Gln Ala Phe Pro Lys Glu Ser Gly
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Arg Gly Gln Leu Gly Glu Gly Ala Val Pro Ser Ser Arg Pro Gly Pro	
20 25 30	
ccc cgc gga ggt ggc cac gtc agc gca gcg tcg ctc gga gct cgc ggc	144
Pro Arg Gly Gly Gly His Val Ser Ala Ala Ser Leu Gly Ala Arg Gly	
35 40 45	
cgg atg ggg aag gcg gcg gcg gcg gtg gcc ttt ggg gcc gaa gtg ggc	192
Arg Met Gly Lys Ala Ala Ala Val Ala Phe Gly Ala Glu Val Gly	
50 55 60	
gtg cgg ctc gcg ctg ttc gcg gcc ttc ctg gtg acg gag ctg ctc ccc	240
Val Arg Leu Ala Leu Phe Ala Ala Phe Leu Val Thr Glu Leu Leu Pro	
65 70 75 80	
ccg ttc cag aga ctc atc cag ccg gag gag atg tgg ctc tac cgg aac	288

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Pro	Tyr	Val	Glu	Ala	Glu	Tyr	Phe	Pro	Thr	Lys	Pro	Met	Phe	Val	Ile		
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Ala	Phe	Leu	Ser	Pro	Leu	Ser	Leu	Ile	Phe	Leu	Ala	Lys	Phe	Leu	Lys		
			115				120					125					
aag	gca	gac	aca	aga	gac	agc	aga	caa	gcc	tgc	ctg	gct	gcc	agc	ctt	432	
Lys	Ala	Asp	Thr	Arg	Asp	Ser	Arg	Gln	Ala	Cys	Leu	Ala	Ala	Ser	Leu		
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Ala	Leu	Ala	Leu	Asn	Gly	Val	Phe	Thr	Asn	Thr	Ile	Lys	Leu	Ile	Val		
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Gly	Arg	Pro	Arg	Pro	Asp	Phe	Phe	Tyr	Arg	Cys	Phe	Pro	Asp	Gly	Leu		
			165					170						175			
gcc	cat	tct	gac	ttg	atg	tgt	aca	ggg	gat	aag	gac	gtg	gtg	aat	gag	576	
Ala	His	Ser	Asp	Leu	Met	Cys	Thr	Gly	Asp	Lys	Asp	Val	Val	Asn	Glu		
			180					185					190				
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Gly	Arg	Lys	Ser	Phe	Pro	Ser	Gly	His	Ser	Ser	Phe	Ala	Phe	Ala	Gly		
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ctg	gcc	ttt	gcg	tcc	ttc	tac	ctg	gca	ggg	aag	tta	cac	tgc	ttc	aca	672	
Leu	Ala	Phe	Ala	Ser	Phe	Tyr	Leu	Ala	Gly	Lys	Leu	His	Cys	Phe	Thr		
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Pro	Gln	Gly	Arg	Gly	Lys	Ser	Trp	Arg	Phe	Cys	Ala	Phe	Leu	Ser	Pro		
	225				230				235						240		
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Leu	Leu	Phe	Ala	Ala	Val	Ile	Ala	Leu	Ser	Arg	Thr	Cys	Asp	Tyr	Lys		
			245					250						255			
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His	His	Trp	Gln	Asp	Val	Leu	Val	Gly	Ser	Met	Ile	Gly	Met	Thr	Phe		
			260					265					270				
gcc	tat	gtc	tgc	tat	cgg	cag	tat	tat	cct	cct	ctg	act	gat	gca	gaa	864	
Ala	Tyr	Val	Cys	Tyr	Arg	Gln	Tyr	Tyr	Pro	Pro	Leu	Thr	Asp	Ala	Glu		
		275					280					285					
tgc	cat	aaa	cca	ttt	caa	gac	aaa	ctt	gta	ctt	tcc	act	gca	cag	aag	912	
Cys	His	Lys	Pro	Phe	Gln	Asp	Lys	Leu	Val	Leu	Ser	Thr	Ala	Gln	Lys		
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35 40 45

Arg Met Gly Lys Ala Ala Ala Ala Val Ala Phe Gly Ala Glu Val Gly
50 55 60

Val Arg Leu Ala Leu Phe Ala Ala Phe Leu Val Thr Glu Leu Leu Pro
65 70 75 80

Pro Phe Gln Arg Leu Ile Gln Pro Glu Glu Met Trp Leu Tyr Arg Asn
85 90 95

Pro Tyr Val Glu Ala Glu Tyr Phe Pro Thr Lys Pro Met Phe Val Ile
100 105 110

Ala Phe Leu Ser Pro Leu Ser Leu Ile Phe Leu Ala Lys Phe Leu Lys
115 120 125

Lys Ala Asp Thr Arg Asp Ser Arg Gln Ala Cys Leu Ala Ala Ser Leu
130 135 140

Ala Leu Ala Leu Asn Gly Val Phe Thr Asn Thr Ile Lys Leu Ile Val
145 150 155 160

Gly Arg Pro Arg Pro Asp Phe Phe Tyr Arg Cys Phe Pro Asp Gly Leu
165 170 175

Ala His Ser Asp Leu Met Cys Thr Gly Asp Lys Asp Val Val Asn Glu

180	185	190
Gly Arg Lys Ser Phe Pro Ser Gly His Ser Ser Phe Ala Phe Ala Gly		
195	200	205
Leu Ala Phe Ala Ser Phe Tyr Leu Ala Gly Lys Leu His Cys Phe Thr		
210	215	220
Pro Gln Gly Arg Gly Lys Ser Trp Arg Phe Cys Ala Phe Leu Ser Pro		
225	230	235 240
Leu Leu Phe Ala Ala Val Ile Ala Leu Ser Arg Thr Cys Asp Tyr Lys		
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His His Trp Gln Asp Val Leu Val Gly Ser Met Ile Gly Met Thr Phe		
260	265	270
Ala Tyr Val Cys Tyr Arg Gln Tyr Tyr Pro Pro Leu Thr Asp Ala Glu		
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Cys His Lys Pro Phe Gln Asp Lys Leu Val Leu Ser Thr Ala Gln Lys		
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Arg Leu Ala Leu Phe Ala Ala Phe Leu Val Thr Glu Leu Leu Pro Pro	
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Phe Gln Arg Leu Ile Gln Pro Glu Glu Met Trp Leu Tyr Arg Asn Pro	

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Tyr Val Glu Ala Glu Tyr	Phe Pro Thr Lys Pro	Met Phe Val Ile Ala	
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Phe Leu Ser Pro Leu Ser	Leu Ile Phe Leu Ala	Lys Phe Leu Lys Lys	
65	70	75 80	
gca gac aca aga gac agc	aga caa gcc tgc ctg	gct gcc agc ctt gcc	288
Ala Asp Thr Arg Asp Ser	Arg Gln Ala Cys Leu	Ala Ala Ser Leu Ala	
85	90	95	
ctg gct ctg aat ggc gtc	ttt acc aac aca ata	aaa ctg atc gta ggg	336
Leu Ala Leu Asn Gly Val	Phe Thr Asn Thr Ile	Lys Leu Ile Val Gly	
100	105	110	
agg cca cgc cca gat ttc	ttc tac cgc tgc ttc	cct gat ggg cta gcc	384
Arg Pro Arg Pro Asp Phe	Phe Tyr Arg Cys Phe	Pro Asp Gly Leu Ala	
115	120	125	
cat tct gac ttg atg tgt	aca ggg gat aag gac	gtg gtg aat gag ggc	432
His Ser Asp Leu Met Cys	Thr Gly Asp Lys Asp	Val Val Asn Glu Gly	
130	135	140	
cga aag agc ttc ccc agt	gga cat tct tcc ttt	gca ttt gct ggt ctg	480
Arg Lys Ser Phe Pro Ser	Gly His Ser Ser Phe	Ala Phe Ala Gly Leu	
145	150	155 160	
gcc ttt gcg tcc ttc tac	ctg gca ggg aag tta	cac tgc ttc aca cca	528
Ala Phe Ala Ser Phe Tyr	Leu Ala Gly Lys Leu	His Cys Phe Thr Pro	
165	170	175	
caa ggc cgt ggg aaa tct	tgg agg ttc tgt gcc	ttt ctg tca cct cta	576
Gln Gly Arg Gly Lys Ser	Trp Arg Phe Cys Ala	Phe Leu Ser Pro Leu	
180	185	190	
ctt ttt gca gct gtg att	gca ctg tcc cgc aca	tgt gac tac aag cat	624
Leu Phe Ala Ala Val Ile	Ala Leu Ser Arg Thr	Cys Asp Tyr Lys His	
195	200	205	
cac tgg caa gat gta cta	gtt gga tcc atg att	gga atg aca ttt gcc	672
His Trp Gln Asp Val Leu	Val Gly Ser Met Ile	Gly Met Thr Phe Ala	
210	215	220	
tat gtc tgc tat cgg cag	tat tat cct cct ctg	act gat gca gaa tgc	720
Tyr Val Cys Tyr Arg Gln	Tyr Tyr Pro Pro Leu	Thr Asp Ala Glu Cys	
225	230	235 240	
cat aaa cca ttt caa gac	aaa ctt gta ctt tcc	act gca cag aag cct	768
His Lys Pro Phe Gln Asp	Lys Leu Val Leu Ser	Thr Ala Gln Lys Pro	
245	250	255	
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<213> Homo sapiens

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Phe Gln Arg Leu Ile Gln Pro Glu Glu Met Trp Leu Tyr Arg Asn Pro
35 40 45

Tyr Val Glu Ala Glu Tyr Phe Pro Thr Lys Pro Met Phe Val Ile Ala
50 55 60

Phe Leu Ser Pro Leu Ser Leu Ile Phe Leu Ala Lys Phe Leu Lys Lys
65 70 75 80

Ala Asp Thr Arg Asp Ser Arg Gln Ala Cys Leu Ala Ala Ser Leu Ala
85 90 95

Leu Ala Leu Asn Gly Val Phe Thr Asn Thr Ile Lys Leu Ile Val Gly
100 105 110

Arg Pro Arg Pro Asp Phe Phe Tyr Arg Cys Phe Pro Asp Gly Leu Ala
115 120 125

His Ser Asp Leu Met Cys Thr Gly Asp Lys Asp Val Val Asn Glu Gly
130 135 140

Arg Lys Ser Phe Pro Ser Gly His Ser Ser Phe Ala Phe Ala Gly Leu
145 150 155 160

Ala Phe Ala Ser Phe Tyr Leu Ala Gly Lys Leu His Cys Phe Thr Pro
165 170 175

Gln Gly Arg Gly Lys Ser Trp Arg Phe Cys Ala Phe Leu Ser Pro Leu
180 185 190

Leu Phe Ala Ala Val Ile Ala Leu Ser Arg Thr Cys Asp Tyr Lys His
 195 200 205

His Trp Gln Asp Val Leu Val Gly Ser Met Ile Gly Met Thr Phe Ala
 210 215 220

Tyr Val Cys Tyr Arg Gln Tyr Tyr Pro Pro Leu Thr Asp Ala Glu Cys
 225 230 235 240

His Lys Pro Phe Gln Asp Lys Leu Val Leu Ser Thr Ala Gln Lys Pro
 245 250 255

Gly Asp Ser Tyr Cys Phe Asp Ile
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 Ser Gly Arg Thr Met Arg Glu Leu Ala Ile Glu Ile Gly Val Arg Ala
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 Leu Leu Phe Gly Val Phe Val Phe Thr Glu Phe Leu Asp Pro Phe Gln
 35 40 45
 aga gtc atc cag cca gaa gag atc tgg ctc tat aaa aat cct ttg gtg 192
 Arg Val Ile Gln Pro Glu Glu Ile Trp Leu Tyr Lys Asn Pro Leu Val
 50 55 60
 caa tca gat aac ata cct acc cgc ctc atg ttt gca att tct ttc ctc 240
 Gln Ser Asp Asn Ile Pro Thr Arg Leu Met Phe Ala Ile Ser Phe Leu
 65 70 75 80
 aca ccc ctg gct gtt att tgt gtg gtg aaa att atc cgg cga aca gac 288
 Thr Pro Leu Ala Val Ile Cys Val Val Lys Ile Ile Arg Arg Thr Asp
 85 90 95

aag act gaa att aag gaa gcc ttc tta gcg gtg tcc ttg gct ctt gct Lys Thr Glu Ile Lys Glu Ala Phe Leu Ala Val Ser Leu Ala Leu Ala 100 105 110	336
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cgc ccc gat ttc ttt tac cgc tgc ttt cca gat gga gtg atg aac tcg Arg Pro Asp Phe Phe Tyr Arg Cys Phe Pro Asp Gly Val Met Asn Ser 130 135 140	432
gaa atg cat tgc aca ggt gac ccc gat ctg gtg tcc gag ggc cgc aaa Glu Met His Cys Thr Gly Asp Pro Asp Leu Val Ser Glu Gly Arg Lys 145 150 155 160	480
agc ttc ccc agc atc cat tcc tcc ttt gcc ttt tcg ggc ctt ggc ttc Ser Phe Pro Ser Ile His Ser Ser Phe Ala Phe Ser Gly Leu Gly Phe 165 170 175	528
acg acg ttc tac ttg gcg ggc aag ctg cac tgc ttc acc gag agt ggg Thr Thr Phe Tyr Leu Ala Gly Lys Leu His Cys Phe Thr Glu Ser Gly 180 185 190	576
cgg gga aag agc tgg cgg ctc tgt gct gcc atc ctg ccc ttg tac tgc Arg Gly Lys Ser Trp Arg Leu Cys Ala Ala Ile Leu Pro Leu Tyr Cys 195 200 205	624
gcc atg atg att gcc ctg tcc cgc atg tgc gac tac aag cat cac tgg Ala Met Met Ile Ala Leu Ser Arg Met Cys Asp Tyr Lys His His Trp 210 215 220	672
caa gat tcc ttt gtg ggt gga gtc atc ggc ctc att ttt gca tac att Gln Asp Ser Phe Val Gly Gly Val Ile Gly Leu Ile Phe Ala Tyr Ile 225 230 235 240	720
tgc tac aga cag cac tat cct cct ctg gcc aac aca gct tgc cat aaa Cys Tyr Arg Gln His Tyr Pro Pro Leu Ala Asn Thr Ala Cys His Lys 245 250 255	768
ccc tac gtt agt ctg cga gtc cca gcc tca ctg aag aaa gag gag agg Pro Tyr Val Ser Leu Arg Val Pro Ala Ser Leu Lys Lys Glu Glu Arg 260 265 270	816
ccc aca gct gac agc gca ccc agc ttg cct ctg gag ggg atc acc gaa Pro Thr Ala Asp Ser Ala Pro Ser Leu Pro Leu Glu Gly Ile Thr Glu 275 280 285	864
ggc ccg gta tga Gly Pro Val 290	876

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<211> 291

<212> PRT
<213> Homo sapiens

<400> 10

Met Ala Ala Gly Ala Ala Glu Ser Thr Ser Cys Arg Arg Gly Ser Cys
1 5 10 15

Ser Gly Arg Thr Met Arg Glu Leu Ala Ile Glu Ile Gly Val Arg Ala
20 25 30

Leu Leu Phe Gly Val Phe Val Phe Thr Glu Phe Leu Asp Pro Phe Gln
35 40 45

Arg Val Ile Gln Pro Glu Glu Ile Trp Leu Tyr Lys Asn Pro Leu Val
50 55 60

Gln Ser Asp Asn Ile Pro Thr Arg Leu Met Phe Ala Ile Ser Phe Leu
65 70 75 80

Thr Pro Leu Ala Val Ile Cys Val Val Lys Ile Ile Arg Arg Thr Asp
85 90 95

Lys Thr Glu Ile Lys Glu Ala Phe Leu Ala Val Ser Leu Ala Leu Ala
100 105 110

Leu Asn Gly Val Cys Thr Asn Thr Ile Lys Leu Ile Val Gly Arg Pro
115 120 125

Arg Pro Asp Phe Phe Tyr Arg Cys Phe Pro Asp Gly Val Met Asn Ser
130 135 140

Glu Met His Cys Thr Gly Asp Pro Asp Leu Val Ser Glu Gly Arg Lys
145 150 155 160

Ser Phe Pro Ser Ile His Ser Ser Phe Ala Phe Ser Gly Leu Gly Phe
165 170 175

Thr Thr Phe Tyr Leu Ala Gly Lys Leu His Cys Phe Thr Glu Ser Gly
180 185 190

Arg Gly Lys Ser Trp Arg Leu Cys Ala Ala Ile Leu Pro Leu Tyr Cys
195 200 205

Ala Met Met Ile Ala Leu Ser Arg Met Cys Asp Tyr Lys His His Trp
 210 215 220

Gln Asp Ser Phe Val Gly Gly Val Ile Gly Leu Ile Phe Ala Tyr Ile
 225 230 235 240

Cys Tyr Arg Gln His Tyr Pro Pro Leu Ala Asn Thr Ala Cys His Lys
 245 250 255

Pro Tyr Val Ser Leu Arg Val Pro Ala Ser Leu Lys Lys Glu Glu Arg
 260 265 270

Pro Thr Ala Asp Ser Ala Pro Ser Leu Pro Leu Glu Gly Ile Thr Glu
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Gly Pro Val
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<220>
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 1 5 10 15
 gtc ttc gtt ttt aca gag ttt ttg gat ccg ttc cag aga gtc atc cag 96
 Val Phe Val Phe Thr Glu Phe Leu Asp Pro Phe Gln Arg Val Ile Gln
 20 25 30
 cca gaa gag atc tgg ctc tat aaa aat cct ttg gtg caa tca gat aac 144
 Pro Glu Glu Ile Trp Leu Tyr Lys Asn Pro Leu Val Gln Ser Asp Asn
 35 40 45
 ata cct acc cgc ctc atg ttt gca att tct ttc ctc aca ccc ctg gct 192
 Ile Pro Thr Arg Leu Met Phe Ala Ile Ser Phe Leu Thr Pro Leu Ala
 50 55 60
 gtt att tgt gtg gtg aaa att atc cgg cga aca gac aag act gaa att 240
 Val Ile Cys Val Val Lys Ile Ile Arg Arg Thr Asp Lys Thr Glu Ile
 65 70 75 80

aag gaa gcc ttc tta gcg gtg tcc ttg gct ctt gct ttg aat gga gtc	288
Lys Glu Ala Phe Leu Ala Val Ser Leu Ala Leu Ala Leu Asn Gly Val	
85 90 95	
tgC aca aac act att aaa tta ata gtg gga aga cct cgc ccc gat ttc	336
Cys Thr Asn Thr Ile Lys Leu Ile Val Gly Arg Pro Arg Pro Asp Phe	
100 105 110	
ttt tac cgc tgc ttt cca gat gga gtg atg aac tcg gaa atg cat tgc	384
Phe Tyr Arg Cys Phe Pro Asp Gly Val Met Asn Ser Glu Met His Cys	
115 120 125	
aca ggt gac ccc gat ctg gtg tcc gag ggc cgc aaa agc ttc ccc agc	432
Thr Gly Asp Pro Asp Leu Val Ser Glu Gly Arg Lys Ser Phe Pro Ser	
130 135 140	
atc cat tcc tcc ttt gcc ttt tcg ggc ctt ggc ttc acg acg ttc tac	480
Ile His Ser Ser Phe Ala Phe Ser Gly Leu Gly Phe Thr Thr Phe Tyr	
145 150 155 160	
ttg gcg ggc aag ctg cac tgc ttc acc gag agt ggg cgg gga aag agc	528
Leu Ala Gly Lys Leu His Cys Phe Thr Glu Ser Gly Arg Gly Lys Ser	
165 170 175	
tgg cgg ctc tgt gct gcc atc ctg ccc ttg tac tgc gcc atg atg att	576
Trp Arg Leu Cys Ala Ala Ile Leu Pro Leu Tyr Cys Ala Met Met Ile	
180 185 190	
gcc ctg tcc cgc atg tgc gac tac aag cat cac tgg caa gat tcc ttt	624
Ala Leu Ser Arg Met Cys Asp Tyr Lys His His Trp Gln Asp Ser Phe	
195 200 205	
gtg ggt gga gtc atc ggc ctc att ttt gca tac att tgc tac aga cag	672
Val Gly Gly Val Ile Gly Leu Ile Phe Ala Tyr Ile Cys Tyr Arg Gln	
210 215 220	
cac tat cct cct ctg gcc aac aca gct tgc cat aaa ccc tac gtt agt	720
His Tyr Pro Pro Leu Ala Asn Thr Ala Cys His Lys Pro Tyr Val Ser	
225 230 235 240	
ctg cga gtc cca gcc tca ctg aag aaa gag gag agg ccc aca gct gac	768
Leu Arg Val Pro Ala Ser Leu Lys Lys Glu Glu Arg Pro Thr Ala Asp	
245 250 255	
agc gca ccc agc ttg cct ctg gag ggg atc acc gaa ggc ccg gta tga	816
Ser Ala Pro Ser Leu Pro Leu Glu Gly Ile Thr Glu Gly Pro Val	
260 265 270	

<210> 12
 <211> 271
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<400> 12

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Val	Phe	Val	Phe	Thr	Glu	Phe	Leu	Asp	Pro	Phe	Gln	Arg	Val	Ile	Gln	20	25	30	
Pro	Glu	Glu	Ile	Trp	Leu	Tyr	Lys	Asn	Pro	Leu	Val	Gln	Ser	Asp	Asn	35	40	45	
Ile	Pro	Thr	Arg	Leu	Met	Phe	Ala	Ile	Ser	Phe	Leu	Thr	Pro	Leu	Ala	50	55	60	
Val	Ile	Cys	Val	Val	Lys	Ile	Ile	Arg	Arg	Thr	Asp	Lys	Thr	Glu	Ile	65	70	75	80
Lys	Glu	Ala	Phe	Leu	Ala	Val	Ser	Leu	Ala	Leu	Ala	Leu	Asn	Gly	Val	85	90	95	
Cys	Thr	Asn	Thr	Ile	Lys	Leu	Ile	Val	Gly	Arg	Pro	Arg	Pro	Asp	Phe	100	105	110	
Phe	Tyr	Arg	Cys	Phe	Pro	Asp	Gly	Val	Met	Asn	Ser	Glu	Met	His	Cys	115	120	125	
Thr	Gly	Asp	Pro	Asp	Leu	Val	Ser	Glu	Gly	Arg	Lys	Ser	Phe	Pro	Ser	130	135	140	
Ile	His	Ser	Ser	Phe	Ala	Phe	Ser	Gly	Leu	Gly	Phe	Thr	Thr	Phe	Tyr	145	150	155	160
Leu	Ala	Gly	Lys	Leu	His	Cys	Phe	Thr	Glu	Ser	Gly	Arg	Gly	Lys	Ser	165	170	175	
Trp	Arg	Leu	Cys	Ala	Ala	Ile	Leu	Pro	Leu	Tyr	Cys	Ala	Met	Met	Ile	180	185	190	
Ala	Leu	Ser	Arg	Met	Cys	Asp	Tyr	Lys	His	His	Trp	Gln	Asp	Ser	Phe	195	200	205	
Val	Gly	Gly	Val	Ile	Gly	Leu	Ile	Phe	Ala	Tyr	Ile	Cys	Tyr	Arg	Gln	210	215	220	

His Tyr Pro Pro Leu Ala Asn Thr Ala Cys His Lys Pro Tyr Val Ser
 225 230 235 240

Leu Arg Val Pro Ala Ser Leu Lys Lys Glu Glu Arg Pro Thr Ala Asp
 245 250 255

Ser Ala Pro Ser Leu Pro Leu Glu Gly Ile Thr Glu Gly Pro Val
 260 265 270

<210> 13
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<400> 15
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<210> 18
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 <400> 25
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 <210> 26
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gcagccctgg tgaccag 17